



## **APPENDIX A**

### **ENVIRONMENTAL REGULATORY COMPLIANCE**

#### **INTRODUCTION**

The operation of the groundwater treatment facility at the Colbert Landfill is potentially subject to the requirements of a number of different environmental regulations. In some cases, certain requirements clearly apply, as those covering the discharge of the treated groundwater from the air stripping tower. However, in other cases, the applicability of regulatory requirements will depend on circumstances at the facility. It is important to understand what actions may trigger the applicability of a regulation so that compliance problems can be prevented from occurring; either by avoiding the action or by insuring all the regulatory requirements are met. Following is a summary of some key environmental regulations and requirements that either are or could be applicable to the operations.

#### **WASTEWATER DISCHARGE REQUIREMENTS**

The treated groundwater from the air stripping tower is discharged to the Little Spokane River. Because the facility is located in a Superfund site and is part of the cleanup activities on the site, an NPDES permit is not required. However, in place of the NPDES permit, the Washington State Department of Ecology (Ecology) has substantive discharge requirements that apply to the discharge. A copy of those requirements are in Appendix B of this document. The facility is required to sample and test the effluent, record the results, and report the results of the testing. It also specifies limitations on certain parameters that must be met in the discharge.

#### **DANGEROUS WASTE MANAGEMENT REQUIREMENTS**

Facilities that generate, manage, or dispose of dangerous waste in Washington are subject to the Washington dangerous waste regulations in chapter 173-303 WAC. To determine whether these regulations apply to the facility, it must first be determined whether any dangerous waste is generated, how much is generated each month, and whether the generated dangerous waste is accumulated onsite.

## DESIGNATING DANGEROUS WASTE

The Washington State dangerous waste regulations (chapter 173-303 WAC) require everyone who generates solid waste (this includes solids, liquids, and gasses) to determine if any of their wastes are classified as a dangerous waste. This designation is done by comparing each waste with the lists of products that are a dangerous waste when discarded unused (applies only to unused materials); the list of dangerous waste sources, the dangerous waste characteristics (ignitability, corrosivity, reactivity, toxicity); and the dangerous waste criteria (toxic and persistent). The sections of the dangerous waste regulations covering these lists, characteristics, and criteria are WAC 173-303-080 to 100. The lists are in WAC 173-303-9903. Wastes may be designated by testing them or by generator knowledge of the waste.

Dangerous waste could potentially be generated from a variety of facility activities, including:

- Maintenance, including cleaning, degreasing, painting, etc.
- Cleaning of the facility dry wells and sumps
- Batch cleaning of the air stripping tower.

Whether these activities generate dangerous waste depends upon the materials used and their characteristics after they are used. Chemicals that may be used during batch cleaning of the air stripping tower include hydrochloric acid, sodium hydroxide, and hydrogen peroxide. Hydrochloric acid could be used to dissolve calcium carbonate scale if it should form on the tower packing. Sodium hydroxide would then be used as necessary to neutralize the acid to a pH between 6 to 8. This procedure is detailed in the main body of this plan (Table 6-35). The final spent batch cleaning solution would then not be considered a dangerous waste in terms of its pH. To be considered a dangerous waste with respect to pH, the spent batch cleaning solution would have to have a pH less than or equal to 2, or greater than or equal to 12.5.

Hydrogen peroxide could be used for batch cleaning if biological fouling is present in the air stripping tower. As the hydrogen peroxide oxidizes the biological growth, the hydrogen peroxide and biological growth are broken down into non-hazardous oxidized bacteria and water. As long as hydrogen peroxide is not used in significant excess of the required quantity, the residual spent batch cleaning solution is not expected to possess the dangerous waste definition of an "oxidizer" as defined in WAC 173-303-090. If hydrogen peroxide is used in excess quantity, such

that there remains a substantial concentration of hydrogen peroxide in the spent cleaning solution, then the solution could be considered a dangerous waste by virtue of the definition of an oxidizer.

Properly neutralized batch cleaning solution is not expected to have the characteristics of or meet the criteria as dangerous waste, since they also are not listed as dangerous wastes. They are not expected to be designated as dangerous waste.

However, if surplus unused hydrochloric acid, unused sodium hydroxide, or unused hydrogen peroxide are to be disposed, they will likely possess the characteristics of a dangerous waste. These unused compounds would then be designated as dangerous waste.

Paint, solvents, and rags used to apply or clean up these materials may also be designated dangerous wastes, depending upon the nature of the paint and solvents that are used.

#### **DANGEROUS WASTE QUANTITY LIMITS**

If a facility generates less than 220 pounds per month of dangerous waste and accumulates less than 2,200 pounds of dangerous waste at any one time, they are a small quantity generator. Small quantity generators are not subject to the requirements of the dangerous waste regulations provided they:

- Properly designate their waste
- Manage their waste in a way that does not pose a potential threat to human health or the environment
- Either treat or dispose of their dangerous waste in an onsite facility, or ensure delivery to an offsite facility that is permitted to manage dangerous waste, beneficially reuse or recycle the waste, or is permitted to manage municipal or industrial solid waste.

It should be noted that there are certain wastes that have a 2.2 pound limitation for determining whether a generator is fully regulated. These wastes are not expected to be present at the facility; however, the operator should be aware of their significance in case they may be present. These wastes are discarded products that are listed under the "P" list of discarded chemicals (WAC 173-303-9903), and all have a quantity limitation of 2.2 pounds. This means that to remain a small quantity generator, you must generate less than 2.2 pounds per month of that waste and accumulate less than a total of 2.2 pounds at any one time in order to remain a small quantity generator. The "P" list is included as an attachment a to this appendix. This document will continue to refer only to the 220 pound limitation that exists for most waste. But it is important to keep in mind this exception.

If a facility generates more than 220 pounds of dangerous waste per month or accumulates more than 2,200 pounds at any one time, it is subject to the dangerous waste management requirements in the dangerous waste regulations. Therefore, it is important to closely track the amount of waste generated.

## **DANGEROUS WASTE MANAGEMENT REQUIREMENTS**

This summary does not provide detailed instructions for managing dangerous waste since it is likely that the facility will remain a small quantity generator. To avoid being subject to full regulation of the waste, small quantity generators must comply with certain limited requirements.

Should the facility generate over 220 pounds per month of dangerous waste or accumulate more than 2,200 pounds of dangerous waste at any one time, the facility will be considered fully regulated. If fully regulated, there are a number of dangerous waste management requirements that will apply in the following areas as well as others:

- Waste designation
- Generator notification to Ecology
- Container type
- Storage and accumulation
- Waste container and tank labeling
- Facility inspections
- Recordkeeping and reporting
- Manifesting
- Transportation
- Disposal.

If it is determined that the facility could generate or accumulate enough waste to be fully regulated, the facility operator should carefully review the requirements of the dangerous waste regulations to insure that all requirements will be met by the facility. Information regarding the applicable requirements can be obtained from Ecology or Landau Associates.

## CHEMICAL INVENTORY REPORTING

The Emergency Planning and Community Right to Know Act (EPCRTKA, Sections 311 and 312) created requirements for providing information to the community on hazardous chemical that are present at a facility at any one time in quantities equal to or exceeding 10,000 pounds (the specific requirements are in 40 CFR 370). In addition, the same reporting requirements apply for any extremely hazardous chemicals present onsite at any one time in quantities equal to or exceeding 500 pounds. Chemical manufacturers and suppliers are required to provide a MSDS with each hazardous chemical they provide. Therefore, if a chemical has a MSDS, it should be assumed that it is a hazardous chemical subject to the chemical inventory requirements of EPCRTKA unless the material is determined to qualify as nonhazardous. Extremely hazardous chemicals are listed in Appendix A of 40 CFR 355.

### CHEMICALS AFFECTED

Based on the projected operations of the Colbert Landfill groundwater treatment facility, there are three chemicals that could potentially be onsite in sufficient quantities to require reporting under the chemical inventory reporting requirements located in 40 CFR 370. These are hydrochloric acid, hydrogen peroxide, and sodium hydroxide. If the following amounts of these chemicals are onsite at any one time, then the chemical inventory reporting requirements are applicable:

- Hydrochloric acid 10,000 pounds
- Hydrogen peroxide 10,000 pounds  
(52 percent concentration or less)
- Hydrogen peroxide 500 pounds  
(greater than 52 percent concentration)
- Sodium hydroxide 10,000 pounds

### REPORTING

If the above chemicals are onsite in amounts equal to or in excess of the specified quantity limits, the facility is subject to the regulations in 40 CFR 370, which require submittal of MSDSs to the local fire department, the local emergency planning committee, and the state emergency response committee within three months of the date that the quantity of each chemical onsite

reaches the limit. In addition, an annual inventory form (located in 40 CFR 370) for the affected chemicals must be filled out and reported to the same organizations each year by March 1 of the following year.

By carefully monitoring the amounts (and in the case of hydrogen peroxide, the concentration) of the chemicals brought onsite, it should be possible to avoid triggering the chemical inventory requirements. However, if one or more of these chemicals must be present in excess of the limits, the facility operator should insure that the MSDSs and the inventory forms are submitted as required in 40 CFR 370. For assistance in preparing the required inventory report, contact the Ecology or Landau Associates.

## **HAZARD COMMUNICATION STANDARD**

The hazard communication regulations require employers to inform their workers of the hazards associated with the chemicals they will encounter in the work place. It is often called "worker right to know" after the federal Worker Right to Know Act that mandated the requirements. In Washington state, the requirements are located in Part C of chapter 296-62 WAC. The program is administered by the Washington State Department of Labor and Industries, Division of Industrial Safety and Health (WISHA), and is required for all facilities that handle hazardous chemicals.

## **HAZARDOUS CHEMICALS**

Hazardous chemical is defined in the Washington Administrative Code as any chemical that poses a physical hazard or health hazard. This is obviously very broad. Since MSDSs are required for all hazardous chemicals, the facility should treat any chemical onsite that has an MSDS as being hazardous and, therefore, subject to the hazard communication standard unless a specific determination is made that it is nonhazardous. The chemical manufacturer and supplier are required to provide a MSDS for all hazardous chemicals they manufacture or distribute.

Hydrochloric acid, hydrogen peroxide, and sodium hydroxide are hazardous chemicals and will cause the facility to be subject to the hazard communication requirements if they are brought onsite. It is important to also carefully evaluate all other chemicals onsite (such as paint, solvents, laboratory reagents, etc.) to determine if any are hazardous.

## **SUMMARY OF REQUIREMENTS**

Employers who have hazardous chemicals in the work place are required to take measures to implement the requirements of the hazard communication standard. The measures include the following items:

- Identification of hazardous chemicals in the work place
- Preparation of a written program
- Applying labels and other forms of warning
- Making MSDSs available
- Informing and training employees.

WISHA has developed guidelines for complying with the hazard communication requirements in WAC 296-62-05429, Appendix E (included as an attachment to this appendix). The facility operator should review these requirements to determine if the facility is subject to the requirements and take the required actions if they are applicable to insure compliance.



ATTACHMENT

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## **"P" Chemical Products**

**WAC 173-303-9903 Discarded chemical products list.**

**Discarded Chemical Products List**

**"P" Chemical Products**

**Comment:** For the convenience of the regulated community, the primary hazardous properties of these materials have been indicated by the letters T (Toxicity), and R (Reactivity). Absence of a letter indicates that the compound is only listed for acute toxicity.

The "P" wastes and their corresponding Dangerous Waste Numbers are:

Dangerous Waste No.	Chemical Abstracts No.	Substance			
P023	107-20-0	Acetaldehyde, chloro-	P031	460-19-5	Cyanogen
P002	591-08-2	Acetamide, N-(aminothioxomethyl)-	P033	506-77-4	Cyanogen chloride
		Acetamide, 2-fluoro-	P033	506-77-4	Cyanogen chloride (CN)Cl
P057	640-19-7	Acetic acid, fluoro-, sodium salt	P034	131-89-5	2-Cyclohexyl-4,6-dinitrophenol
P058	62-74-8	1-Acetyl-2-thiourea	P016	542-88-1	Dichloromethyl ether
P002	591-08-2	Acrolein	P036	696-28-6	Dichlorophenylarsine
P003	107-02-8	Aldicarb	P037	60-57-1	Dieldrin
P070	116-06-3	Aldrin	P038	692-42-2	Diethylarsine
P004	309-00-2	Allyl alcohol	P041	311-45-5	Diethyl-p-nitrophenyl phosphate
P005	107-18-6	Aluminum phosphide (R.T)	P040	297-97-2	O,O-Diethyl O-pyrazinyl phosphorothioate
P006	20859-73-8	5-(Aminomethyl)-3-isoxazolol			Diisopropylfluorophosphate (DFP)
P007	2763-96-4	4-Aminopyridine	P043	55-91-4	1,4,5,8-Dimethanonaphthalene, 1,2,3,4,10,10-hexa-chloro-
P008	504-24-5	Ammonium picrate (R)	P004	309-00-2	1,4,4a,5,8,8a-hexahydro-, (1alpha,4alpha,4abeta,5alpha,8alpha,8abeta)-
P009	131-74-8	Ammonium vanadate			1,4,5,8-Dimethanonaphthalene, 1,2,3,4,10,10-hexa-chloro-
P119	7803-55-6	Argemone(1-), bis(cyano-C)-, potassium			1,4,4a,5,8,8a-hexahydro-, (1alpha,4alpha,4abeta,5beta,8beta,8abeta)-
P099	506-61-6	Arsonic acid H <sub>3</sub> AsO <sub>4</sub>	P060	465-73-6	2,7,3,6-Dimethanonaphth[2,3-b]oxirene, 3,4,5,6,9,9-hexachloro-
P010	7778-39-4	Arsonic oxide As <sub>2</sub> O <sub>3</sub>			1a,2,2a,3,6,6a,7,7a-octahydro-, (1alpha,2beta,2alpha,3beta,6beta,6alpha,7beta,7alpha)-
P012	1327-53-3	Arsonic oxide As <sub>2</sub> O <sub>5</sub>			2,7,3,6-Dimethanonaphth[2,3-b]oxirene, 3,4,5,6,9,9-hexachloro-
P011	1303-28-2	Arsonic pentoxide			1a,2,2a,3,6,6a,7,7a-octahydro-, (1alpha,2beta,2alpha,3alpha,6alpha,6beta,7beta,7alpha)-, & metabolites
P011	1303-28-2	Arsonic trioxide			Dimethane
P012	1327-53-3	Arsonic trioxide			alpha, alpha-Dimethylphenethylamine
P038	692-42-2	Arsonic diethyl-	P037	60-57-1	4,6-Dinitro-o-cresol, & salts
P036	696-28-6	Arsonous dichloride, phenyl-			2,4-Dinitrophenol
P054	151-56-4	Aziridine			Dinoseb
P067	75-55-8	Aziridine, 2-methyl-			Diphosphoramidate, octamethyl-
P013	542-62-1	Barium cyanide			Diphosphoric acid, tetramethyl ester
P024	106-47-8	Benzeneamine, 4-chloro-	P051	172-20-8	Disulfoton
P077	100-01-6	Benzeneamine, 4-nitro-			Dithioburet
P028	100-44-7	Benzene, (chloromethyl)-			Endosulfan
P042	51-43-4	1,2-Benzenediol, 4-[1-hydroxy-2-(methylamino)ethyl]-, (R)-			Endothall
		Benzeneethanamine, alpha, alpha-dimethyl-	P044	60-51-5	Endrin
P046	122-09-8	Benzeneethanol			Endrin, & metabolites
P014	108-98-5	2H-1-Benzopyran-2-one, 4-hydroxy-3-(3-oxo-1-phenylbutyl)-, & salts, when present at concentrations greater than 0.3%	P046	122-09-8	Epinephrine
P001	181-81-2	Benzyl chloride			Ethamedimrile
		Beryllium	P047	1534-52-1	Ethanimidodiacid, N-[[[(methylamino)carbonyl]oxy]-methyl ester
P028	100-44-7	Bromacetone	P048	51-28-5	
P015	7440-41-7	Bromocetone	P020	88-85-7	
P017	598-31-2	Brucine	P085	152-16-9	
P018	357-57-3	2-Benzene, 3,3-dimethyl-1-(methylthio)-, O-[(methylamino)carbonyl] oxime	P111	107-49-3	
P045	39196-18-4	Calcium cyanide	P039	298-04-4	
		Calcium cyanide Ca(CN) <sub>2</sub>	P049	541-53-7	
		Carbon disulfide	P050	115-29-7	
		Carbonic dichloride	P088	145-73-3	
		Chloroacetaldehyde	P051	72-20-8	
		p-Chloroaniline	P051	72-20-8	
		1-(o-Chlorophenyl)thiourea	P042	51-43-4	
		3-Chloropropionitrile	P031	460-19-5	
		Copper cyanide	P066	16752-77-5	
		Copper cyanide Cu(CN)			
		Cyanides (soluble cyanide salts), not otherwise specified			

## Dangerous Waste Regulations

P101	107-12-0	Ethyl cyanide	P039	298-04-4	Phosphorodithioic acid, O,O-diethyl S-[2-(ethylthio)ethyl] ester
P054	151-56-4	Ethyleneimine	P094	298-02-2	Phosphorodithioic acid, O,O-diethyl S-[(ethylthio)methyl] ester
P097	52-85-7	Famphur	P044	60-51-5	Phosphorodithioic acid, O,O-dimethyl S-[2-(methylamino)-2-oxoethyl] ester
P056	7782-41-4	Fluorine	P043	55-91-4	Phosphorofluoric acid, bis(1-methylethyl) ester
P057	640-19-7	Fluoroacetamide	P089	56-38-2	Phosphorothioic acid, O,O-diethyl O-(4-nitrophenyl) ester
P058	62-74-8	Fluoroacetic acid, sodium salt	P040	297-97-2	Phosphorothioic acid, O,O-diethyl O-pyrazinyl ester
P065	628-86-4	Fulminic acid, mercury(2+) salt (R,T)	P097	52-85-7	Phosphorothioic acid, O-[4-[(dimethylamino)sulfonyl]phenyl] O,O-dimethyl ester
P059	76-44-8	Heptachlor	P071	298-00-0	Phosphorothioic acid, O,O-dimethyl O-(4-nitrophenyl) ester
P062	757-58-4	Hexaethyl tetraphosphate	P110	78-00-2	Plumbane, tetraethyl-
P116	79-19-6	Hydrazinecarboxamide	P098	151-50-8	Potassium cyanide
P068	60-34-4	Hydrazine, methyl-	P098	151-50-8	Potassium cyanide K(CN)
P063	74-90-8	Hydrocyanic acid	P099	506-61-6	Potassium silver cyanide
P063	74-90-8	Hydrogen cyanide	P070	116-06-3	Propanal, 2-methyl-2-(methylthio)-, O-[(methylamino)carbonyl]oxime
P096	7803-51-2	Hydrogen phosphide	P101	107-12-0	Propanenitrile
P060	465-73-6	Isodrin	P027	542-76-7	Propanenitrile, 3-chloro-
P007	2763-96-4	3(2H)-Isotazalone, 5-(aminomethyl)-	P069	75-86-5	Propanenitrile, 2-hydroxy-2-methyl-
P092	62-38-4	Mercury, (acetato-O)phenyl-	P081	55-63-0	1,2,3-Propanetriol, trinitrate (R)
P065	628-86-4	Mercury fulminate (R,T)	P017	598-31-2	2-Propanone, 1-bromo-
P082	62-75-9	Methanamine, N-methyl-N-nitroso-	P102	107-19-7	Propargyl alcohol
P064	624-83-9	Methane, isocyanato-	P003	107-02-8	2-Propenal
P016	542-88-1	Methane, oxybis(chloro-	P005	107-18-6	2-Propen-1-ol
P112	509-14-8	Methane, tetranitro- (R)	P067	75-55-8	1,2-Propyleneimine
P118	75-70-7	Methanethiol, trichloro-	P102	107-19-7	2-Propyn-1-ol
P050	115-29-7	6,9-Methano-2,4,3-benzodioxathiepin, 6,7,8,9,10,10-hexachloro-1,5,5a,6,9,9a-hexahydro-, 3-oxide	P008	504-24-5	4-Pyridinamine
P059	76-44-8	4,7-Methano-1H-indene, 1,4,5,6,7,8,8-heptachloro-3a,4,7,7a-tetrahydro-	P075	154-11-5	Pyridine, 3-(1-methyl-2-pyrrolidinyl)-, (S)-, & salts
P066	16752-77-5	Methomyl	P114	12039-52-0	Selenious acid, diballium(1+) salt
P068	60-34-4	Methyl hydrazine	P103	630-10-4	Selenourea
P064	624-83-9	Methyl isocyanate	P104	506-64-9	Silver cyanide
P069	75-86-5	2-Methylacetonitrile	P104	506-64-9	Silver cyanide Ag(CN)
P071	298-00-0	Methyl parathion	P105	26628-22-8	Sodium azide
P072	86-88-4	alpha-Naphthylthiourea	P106	143-33-9	Sodium cyanide
P073	13463-39-3	Nickel carbonyl	P106	143-33-9	Sodium cyanide Na(CN)
P073	13463-39-3	Nickel carbonyl Ni(CO) <sub>4</sub> , (T-4)-	P108	157-24-9	Strychnidin-10-one, & salts
P074	557-19-7	Nickel cyanide	P018	357-57-3	Strychnidin-10-one, 2,3-dimethoxy-
P074	557-19-7	Nickel cyanide Ni(CN) <sub>2</sub>	P108	157-24-9	Strychnine, & salts
P075	154-11-5	Nicotine, & salts	P115	7446-18-6	Sulfuric acid, diballium(1+) salt
P076	10102-43-9	Nitric oxide	P109	3689-24-5	Tetraethylthiopyrophosphate
P077	100-01-6	p-Nitroaniline	P110	78-00-2	Tetraethyl lead
P078	10102-44-0	Nitrogen dioxide	P111	107-49-3	Tetraethyl pyrophosphate
P076	10102-43-9	Nitrogen oxide NO	P112	509-14-8	Tetranitromethane (R)
P078	10102-44-0	Nitrogen oxide NO <sub>2</sub>	P062	757-58-4	Tetraphosphoric acid, hexaethyl ester
P081	55-63-0	Nitroglycerine (R)	P113	1314-32-5	Thallous oxide
P082	62-75-9	N-Nitrosodimethylamine	P113	1314-32-5	Thallium oxide Tl <sub>2</sub> O <sub>3</sub>
P084	4549-40-0	N-Nitrosomethylvinylamine	P114	12039-52-0	Thallium(I) selenide
P085	152-16-9	Octamethylpyrophosphoramide	P115	7446-18-6	Thallium(I) sulfate
P087	20816-12-0	Osmium oxide OsO <sub>4</sub> , (T-4)-	P109	3689-24-5	Thiodiphosphoric acid, tetraethyl ester
P087	20816-12-0	Osmium tetroxide	P045	39196-18-4	Thioformox
P088	145-73-3	7-Oxabicyclo[2.2.1]heptane-2,3-dicarboxylic acid	P049	541-53-7	Thioisodidicarbamic diamide [(H <sub>2</sub> N)C(S)] <sub>2</sub> NH
P089	56-38-2	Parathion			
P034	131-89-5	Phenol, 2-cyclohexyl-4,6-dinitro-			
P048	51-28-5	Phenol, 2,4-dinitro-			
P047	1534-52-1	Phenol, 2-methyl-4,6-dinitro-, & salts			
P020	88-85-7	Phenol, 2-(1-methylpropyl)-4,6-dinitro-			
P009	131-74-8	Phenol, 2,4,6-trinitro-, ammonium salt (R)			
P092	62-38-4	Phenylmercury acetate			
P093	103-85-5	Phenylthiourea			
P094	298-02-2	Phorate			
P095	75-44-5	Phosgene			
P096	7803-51-2	Phosphine			
P041	311-45-5	Phosphoric acid, diethyl 4-nitrophenyl ester			

# Dangerous Waste Regulations

173-303-9903

P014	108-98-5	Thiophenol
P116	79-19-6	Thiosemicarbazide
P026	5344-82-1	Thiourea, (2-chlorophenyl)-
P072	86-88-4	Thiourea, 1-naphthalenyl-
P093	103-85-5	Thiourea, phenyl-
P123	8001-35-2	Toxaphene
P118	75-70-7	Trichloromethanethiol
P119	7803-55-6	Vanadic acid, ammonium salt
P120	1314-62-1	Vanadium oxide $V_2O_5$
P120	1314-62-1	Vanadium pentoxide
P084	4549-40-0	Vinylamine, N-methyl-N-nitroso-
P001	<sup>1</sup> 81-81-2	Warfarin, & salts, when present at concentrations greater than 0.3%
P121	557-21-1	Zinc cyanide
P121	557-21-1	Zinc cyanide $Zn(CN)_2$
P122	1314-84-7	Zinc phosphide $Zn_3P_2$ , when present at concentrations greater than 10% (R.T)

FOOTNOTE: <sup>1</sup>CAS Number given for parent compound only.

ATTACHMENT

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**WAC 296-2-05429, Appendix E**  
**Guidelines for Employer Compliance**

**Chapter 296-62 WAC  
Hazard Communication**

**WAC 296-62-05429, Appendix E—Guidelines for employer compliance (advisory).**

The hazard communication standard (HCS) is based on a simple concept—that employees have both a need and a right to know the hazards and identities of the chemicals they are exposed to when working. They also need to know what protective measures are available to prevent adverse effects from occurring. The HCS is designed to provide employees with the information they need.

Knowledge acquired under the HCS will help employers provide safer workplaces for their employees. When employers have information about the chemicals being used, they can take steps to reduce exposures, substitute less hazardous materials, and establish proper work practices. These efforts will help prevent the occurrence of work-related illnesses and injuries caused by chemicals.

The HCS addresses the issues of evaluating and communicating hazards to workers. Evaluation of chemical hazards involves a number of technical concepts, and is a process that requires the professional judgment of experienced experts. That is why the HCS is designed so that employers who simply use chemicals, rather than produce or import them, are not required to evaluate the hazards of those chemicals. Hazard determination is the responsibility of the producers and importers of the materials. Producers and importers of chemicals are then required to provide the hazard information to employers that purchase their products.

Employers that do not produce or import chemicals need only focus on those parts of the rule that deal with establishing a workplace program and communicating information to their workers. This appendix is a general guide for such employers to help them determine what is required under the rule. It does not supplant or substitute for the regulatory provisions, but rather provides a simplified outline of the steps an average employer would follow to meet those requirements.

**1. Becoming Familiar With The Rule.**

WISHA has provided a simple summary of the HCS in a pamphlet entitled "Hazardous Chemicals - Right to Know - Washington Hazard Communication Standard" WISHA Publication Number P413-014-000. Some employers prefer to begin to become familiar with the rule's requirements by reading this pamphlet. A copy may be obtained from your local WISHA office.

The standard is long, and some parts of it are technical, but the basic concepts are simple. In fact, the requirements reflect what many employers have been doing for years. You may find that you are already largely in compliance with many of the provisions, and will simply have to modify your existing programs somewhat. WISHA is an OSHA-approved state plan state, and you must comply with the state's requirements, which may be different than those of the federal rule.

The HCS requires information to be prepared and transmitted regarding all hazardous chemicals. The HCS covers both physical hazards (such as flammability), and health hazards (such as irritation, lung damage, and cancer). Most chemicals used in the workplace have some hazard potential, and thus will be covered by the rule.

One difference between this rule and many others adopted by WISHA is that this one is performance-oriented. That means that you have the flexibility to adapt the rule to the needs of your workplace, rather than having to follow specific, rigid requirements. It also means that you have to exercise more judgment to implement an appropriate and effective program.

The standard's design is simple. Chemical manufacturers and importers must evaluate the hazards of the chemicals they produce or import. Using that information, they must then prepare labels for containers, and more detailed technical bulletins called material safety data sheets (MSDS).

Chemical manufacturers, importers, and distributors of hazardous chemicals are all required to provide the appropriate labels and material safety data sheets to the employers to which they ship the chemicals. The information is to be provided automatically. Every container of hazardous chemicals you receive must be labeled, tagged, or marked with the required information. Your suppliers must also send you a properly completed material safety data sheet (MSDS) at the time of the first shipment of the chemical, and with the next shipment after the MSDS is updated with new and significant information about the hazards.

**WAC 296-62-05429 (Cont.)**

You can rely on the information received from your suppliers. You have no independent duty to analyze the chemical or evaluate the hazards of it.

Employers that "use" hazardous chemicals must have a program to ensure the information is provided to exposed employees. "Use" means to package, handle, react, or transfer. This is an intentionally broad scope, and includes any situation where a chemical is present in such a way that employees may be exposed under normal conditions of use or in a foreseeable emergency.

The requirements of the rule that deal specifically with the hazard communication program are found in WAC 296-62-05409, Written hazard communication program; WAC 296-62-05411, Labels and other forms of warning; WAC 296-62-05413, Material safety data sheets; and WAC 296-62-05415, Employee information and training. The requirements of these paragraphs should be the focus of your attention. Concentrate on becoming familiar with them, using WAC 296-62-05403, Scope and application, and WAC 296-62-05405, Definitions applicable to this part, as references when needed to help explain the provisions.

There are two types of work operations where the coverage of the rule is limited. These are laboratories and operations where chemicals are only handled in sealed containers (e.g., a warehouse). The limited provisions for these workplaces can be found in WAC 296-62-05403, Scope and application. Basically, employers having these types of work operations need only keep labels on containers as they are received; maintain material safety data sheets that are received, and give employees access to them; and provide information and training for employees. Employers do not have to have written hazard communication programs and lists of chemicals for these types of operations. Some of these employers may have to comply with other similar standards which have requirements for a written program. For example, laboratories may be required to have a written chemical hygiene plan under WAC 296-62-400, Hazardous Chemicals in Laboratories.

The limited coverage of laboratories and sealed container operations addresses the obligation of an employer to the workers in the operations involved, and does not affect the employer's duties as a distributor of chemicals. For example, a distributor may have warehouse operations where employees would be protected under the limited sealed container provisions. In this situation, requirements for obtaining and maintaining MSDSs are limited to providing access to those received with containers while the substance is in the workplace, and requesting MSDSs when employees request access for those not received with the containers. However, as a distributor of hazardous chemicals, that employer will still have responsibilities for providing MSDSs to downstream customers at the time of the first shipment and when the MSDS is updated. Therefore, although they may not be required for the employees in the work operation, the distributor may, nevertheless, have to have MSDSs to satisfy other requirements of the rule.

**2. Identify Responsible Staff.**

Hazard communication is going to be a continuing program in your facility. Compliance with the HCS is not a "one shot deal." In order to have a successful program, it will be necessary to assign responsibility for both the initial and ongoing activities that have to be undertaken to comply with the rule. In some cases, these activities may already be part of current job assignments. For example, site supervisors are frequently responsible for on-the-job training sessions. Early identification of the responsible employees, and involvement of them in the development of your plan of action, will result in a more effective program design. Evaluation of the effectiveness of your program will also be enhanced by involvement of affected employees.

For any safety and health program, success depends on commitment at every level of the organization. This is particularly true for hazard communication, where success requires a change in behavior. This will only occur if employers understand the program, and are committed to its success, and if employees are motivated by the people presenting the information to them.

**WAC 296-62-05429 (Cont.)**

**3. Identify Hazardous Chemicals in the Workplace.**

The standard requires a list of hazardous chemicals in the workplace as part of the written hazard communication program. The list will eventually serve as an inventory of everything for which an MSDS must be maintained. At this point, however, preparing the list will help you complete the rest of the program since it will give you some idea of the scope of the program required for compliance in your facility.

The best way to prepare a comprehensive list is to survey the workplace. Purchasing records may also help, and certainly employers should establish procedures to ensure that in the future purchasing procedures result in MSDSs being received before a material is used in the workplace.

The broadest possible perspective should be taken when doing the survey. Sometimes people think of "chemicals" as being only liquids in containers. The HCS covers chemicals in all physical forms--liquids, solids, gases, vapors, fumes, and mists--whether they are "contained" or not. The hazardous nature of the chemical and the potential for exposure are the factors which determine whether a chemical is covered. If it is not hazardous, it is not covered. If there is no potential for exposure (e.g., the chemical is inextricably bound and cannot be released), the rule does not cover the chemical.

Look around. Identify chemicals in containers, including pipes, but also think about chemicals generated in the work operations. For example, welding fumes, dusts, and exhaust fumes are all sources of chemical exposures. Read labels provided by suppliers for hazard information. Make a list of all chemicals in the workplace that are potentially hazardous. For your own information and planning, you may also want to note on the list the location(s) of the products within the workplace, and an indication of the hazards as found on the label. This will help you as you prepare the rest of your program.

WAC 296-62-05403, Scope and application, includes exemptions for various chemicals or workplace situations. After compiling the complete list of chemicals, you should review paragraph (b) of this section to determine if any of the items can be eliminated from the list because they are exempted materials. For example, food, drugs, and cosmetics brought into the workplace for employee consumption are exempt. So rubbing alcohol in the first aid kit would not be covered.

Once you have compiled as complete a list as possible of the potentially hazardous chemicals in the workplace, the next step is to determine if you have received material safety data sheets for all of them. Check your files against the inventory you have just compiled. If any are missing, contact your supplier and request one. It is a good idea to document these requests, either by copy of a letter or a note regarding telephone conversations. If you have MSDSs for chemicals that are not on your list, figure out why. Maybe you do not use the chemical anymore, or maybe you missed it in your survey. Some suppliers do provide MSDSs for products that are not hazardous. These do not have to be maintained by you.

You should not allow employees to use any chemicals for which you have not received an MSDS. The MSDS provides information you need to ensure proper protective measures are implemented prior to exposure.

**4. Preparing and Implementing a Hazard Communication Program.**

All workplaces where employees are exposed to hazardous chemicals must have a written plan which describes how the standard will be implemented in that facility. Preparation of a plan is not just a paper exercise--all of the elements must be implemented in the workplace in order to be in compliance with the rule. See WAC 296-62-05409 for the specific requirements regarding written hazard communication programs. The only work operations which do not have to comply with the written plan requirements are laboratories and work operations where employees only handle chemicals in sealed containers. See WAC 296-62-05403, Scope and application, for the specific requirements for these two types of workplaces.

The plan does not have to be lengthy or complicated. It is intended to be a blueprint for implementation of your program--an assurance that all aspects of the requirements have been addressed.



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**WAC 296-62-05429 (Cont.)**

Many trade associations and other professional groups have provided sample programs and other assistance materials to affected employers. These have been very helpful to many employers since they tend to be tailored to the particular industry involved. You may wish to investigate whether your industry trade groups have developed such materials.

Although such general guidance may be helpful, you must remember that the written program has to reflect what you are doing in your workplace. Therefore, if you use a generic program it must be adapted to address the facility it covers. For example, the written plan must list the chemicals present at the site, indicate who is to be responsible for the various aspects of the program in your facility, and indicate where written materials will be made available to employees.

If WISHA inspects your workplace for compliance with the HCS, the WISHA compliance officer will ask to see your written plan at the outset of the inspection. In general, the following items will be considered in evaluating your program.

The written program must describe how the requirements for labels and other forms of warning, material safety data sheets, and employee information and training, are going to be met in your facility. The following discussion provides the type of information compliance officers will be looking for to decide whether these elements of the hazard communication program have been properly addressed:

**A. Labels and Other Forms of Warning.**

In-plant containers of hazardous chemicals must be labeled, tagged, or marked with the identity of the material and appropriate hazard warnings. Chemical manufacturers, importers, and distributors are required to ensure that every container of hazardous chemicals they ship is appropriately labeled with such information and with the name and address of the producer or other responsible party. Employers purchasing chemicals can rely on the labels provided by their suppliers. If the material is subsequently transferred by the employer from a labeled container to another container, the employer will have to label that container unless it is subject to the portable container exemption. See WAC 296-62-05411 for specific labeling requirements.

The primary information to be obtained from a WISHA-required label is an identity for the material, and appropriate hazard warnings. The identity is any term which appears on the label, the MSDS, and the list of chemicals, and thus links these three sources of information. The identity used by the supplier may be a common or trade name ("Black Magic Formula"), or a chemical name (1,1,1-trichloroethane). The hazard warning is a brief statement of the hazardous effects of the chemical ("flammable," "causes lung damage"). Labels frequently contain other information, such as precautionary measures ("do not use near open flame"), but this information is provided voluntarily and is not required by the rule. Labels must be legible, and prominently displayed. There are no specific requirements for size or color, or any specified text.

With these requirements in mind, the compliance officer will be looking for the following types of information to ensure that labeling will be properly implemented in your facility:

1. Designation of person(s) responsible for ensuring labeling of in-plant containers;
2. Designation of person(s) responsible for ensuring labeling of any shipped containers;
3. Description of labeling system(s) used;
4. Description of written alternatives to labeling of in-plant containers (if used); and
5. Procedures to review and update label information when necessary.

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Employers that are purchasing and using hazardous chemicals--rather than producing or distributing them--will primarily be concerned with ensuring that every purchased container is labeled. If materials are transferred into other containers, the employer must ensure that these are labeled as well, unless they fall under the portable container exemption (WAC 296-62-05411(7)). In terms of labeling systems, you can simply choose to use the labels provided by your suppliers on the containers. These will generally be verbal text labels, and do not usually include numerical rating systems or symbols that require special training. The most important thing to remember is that this is a continuing duty--all in-plant containers of hazardous chemicals must always be labeled. Therefore, it is important to designate someone to be responsible for ensuring that the labels are maintained as required on the containers in your facility, and that newly purchased materials are checked for labels prior to use.

**B. Material Safety Data Sheets.**

Chemical manufacturers and importers are required to obtain or develop a material safety data sheet for each hazardous chemical they produce or import. Distributors are responsible for ensuring that their customers are provided a copy of these MSDSs. Employers must have an MSDS for each hazardous chemical which they use. Employers may rely on the information received from their suppliers. The specific requirements for material safety data sheets are in WAC 296-62-05413.

There is no specified format for the MSDS under the rule, although there are specific information requirements. OSHA has developed a nonmandatory format, OSHA Form 174, which may be used by chemical manufacturers and importers to comply with the rule. The MSDS must be in English (although the employer may maintain copies in other languages as well). You are entitled to receive from your supplier a data sheet which includes all of the information required under the rule. If you do not receive one automatically, you should request one. If you receive one that is obviously inadequate, with, for example, blank spaces that are not completed, you should request an appropriately completed one. If your request for a data sheet or for a corrected data sheet does not produce the information needed, you should contact your local labor and industries field office for assistance in obtaining the MSDS as stated in WAC 296-62-05413(12).

The role of MSDSs under the rule is to provide detailed information on each hazardous chemical, including its potential hazardous effects, its physical and chemical characteristics, and recommendations for appropriate protective measures. This information should be useful to you as the employer responsible for designing protective programs, as well as to the workers. If you are not familiar with material safety data sheets and with chemical terminology, you may need to learn to use them yourself. A glossary of MSDS terms may be helpful in this regard. Generally speaking, most employers using hazardous chemicals will primarily be concerned with MSDS information regarding hazardous effects and recommended protective measures. Focus on the sections of the MSDS that are applicable to your situation.

Because many MSDSs are produced in states other than Washington, there may be a difference between the permissible exposure limit (PEL) listed on the MSDS and the WISHA required PEL. For this reason WISHA will accept the OSHA PEL on the MSDS, but for training and evaluation of employee exposure, within Washington state, the WISHA PEL must be used. Most of the OSHA and WISHA PELs will be identical, but at times some will be different. For example, in April 1994, the OSHA PEL for carbon monoxide was 50 ppm for an 8 hour time-weighted average (TWA) with no short-term exposure limit (STEL) or ceiling value, but the WISHA PEL for carbon monoxide was 35 ppm for an 8 hour TWA, with a ceiling value of 200 ppm and no STEL. The current WISHA PELs are listed in WAC 296-62-075, Air contaminants.

MSDSs must be readily accessible to employees when they are in their work fields during their workshifts. This may be accomplished in many different ways. You must decide what is appropriate for your particular workplace. Some employers keep the MSDSs in a binder in a central location (e.g., in the pickup truck on a construction site). Others, particularly in workplaces with large numbers of chemicals, computerize the information and provide access through terminals. As long as employees can get the information when they need it, any approach may be used. The employees must have access to the MSDSs themselves--simply having a system where the information can be read to them over the phone is only permitted under the mobile worksite provision, WAC 296-62-05413(9) when employees must travel between workplaces during the shift. In this situation, they have access to the MSDSs prior to leaving the primary worksite, and when they return, so the telephone system is simply an emergency arrangement.

**WAC 296-62-05429 (Cont.)**

In order to ensure that you have a current MSDS for each chemical in the plant as required, and that employee access is provided, the compliance officers will be looking for the following types of information in your written program:

1. Designation of person(s) responsible for obtaining and maintaining the MSDSs;
2. How such sheets are to be maintained in the workplace (e.g., in notebooks in the work area(s) or in a computer with terminal access), and how employees can obtain access to them when they are in their work area during the work shift;
3. Procedures to follow when the MSDS is not received at the time of the first shipment;
4. For producers, procedures to update the MSDS when new and significant health information is found; and
5. Description of alternatives to actual data sheets in the workplace, if used.

For employers using hazardous chemicals, the most important aspect of the written program in terms of MSDSs is to ensure that someone is responsible for obtaining and maintaining the MSDSs for every hazardous chemical in the workplace. The list of hazardous chemicals required to be maintained as part of the written program will serve as an inventory. As new chemicals are purchased, the list should be updated. Many companies have found it convenient to include on their purchase orders the name and address of the person designated in their company to receive MSDSs.

**C. Employee Information and Training.**

Each employee who may be "exposed" to hazardous chemicals when working must be provided information and trained prior to initial assignment to work with a hazardous chemical, and whenever the hazard changes. "Exposure" or "exposed" under the rule means that "an employee is subjected to a hazardous chemical in the course of employment through any route of entry (inhalation, ingestion, skin contact or absorption, etc.) and includes potential (e.g., accidental or possible) exposure." See WAC 296-62-05415 for specific requirements. Information and training may be done either by individual chemical, or by categories of hazards (such as flammability or carcinogenicity). If there are only a few chemicals in the workplace, then you may want to discuss each one individually. Where there are large numbers of chemicals, or the chemicals change frequently, you will probably want to train generally based on the hazard categories (e.g., flammable liquids, corrosive materials, carcinogens). Employees will have access to the substance-specific information on the labels and MSDSs.

Information and training is a critical part of the hazard communication program. Information regarding hazards and protective measures are provided to workers through written labels and material safety data sheets. However, through effective information and training, workers will learn to read and understand such information, determine how it can be obtained and used in their own workplaces, and understand the risks of exposure to the chemicals in their workplaces as well as the ways to protect themselves. A properly conducted training program will ensure comprehension and understanding. It is not sufficient to either just read material to the workers, or simply hand them material to read. You want to create a climate where workers feel free to ask questions. This will help you to ensure that the information is understood. You must always remember that the underlying purpose of the HCS is to reduce the incidence of chemical source illnesses and injuries. This will be accomplished by modifying behavior through the provision of hazard information and information about protective measures. If your program works, you and your workers will better understand the chemical hazards within the workplace. The procedures you establish regarding, for example, purchasing, storage, and handling of these chemicals will improve, and thereby reduce the risks posed to employees exposed to the chemical hazards involved. Furthermore, your workers' comprehension will also be increased, and proper work practices will be followed in your workplace.

**WAC 296-62-05429 (Cont.)**

If you are going to do the training yourself, you will have to understand the material and be prepared to motivate the workers to learn. This is not always an easy task, but the benefits are worth the effort. More information regarding appropriate training can be found in a booklet entitled "Understanding Right to Know," Publication Number P413-012-000. A copy may be obtained from your local labor and industries office.

In reviewing your written program with regard to information and training, the following items need to be considered:

1. Designation of person(s) responsible for conducting training;
2. Format of the program to be used (audiovisuals, classroom instruction, etc.);
3. Elements of the training program (should be consistent with the elements in WAC 296-62-05415; and
4. Procedure to train new employees at the time of their initial assignment to work with a hazardous chemical, and to train employees when a new hazard is introduced into the workplace.

The written program should provide enough details about the employer's plans in this area to assess whether or not a good faith effort is being made to train employees. WISHA does not expect that every worker will be able to recite all of the information about each chemical in the workplace. In general, the most important aspects of training under the HCS are to ensure that employees are aware that they are exposed to hazardous chemicals, that they know how to read and use labels and material safety data sheets, and that, as a consequence of learning this information, they are following the appropriate protective measures established by the employer. WISHA compliance officers will be talking to employees to determine if they have received training, if they know they are exposed to hazardous chemicals, and if they know where to obtain substance-specific information on labels and MSDSs.

The HCS does not require employers to maintain records of employee training, but many employers choose to do so. This may help you monitor your own program to ensure that all employees are appropriately trained. If you already have a training program, you may simply have to supplement it with whatever additional information is required under the HCS.

An employer can provide employees information and training through whatever means are found appropriate and protective. Although there would always have to be some training on-site (such as informing employees of the location and availability of the written program and MSDSs), employee training may be satisfied in part by general training about the requirements of the HCS and about chemical hazards on the job which is provided by, for example, trade associations, unions, colleges, and professional schools. In addition, previous training, education and experience of a worker may relieve the employer of some of the burdens of informing and training that worker. Regardless of the method relied upon, however, the employer is always ultimately responsible for ensuring that employees are adequately trained. If the compliance officer finds that the training is deficient, the employer will be cited for the deficiency regardless of who actually provided the training on behalf of the employer.

**D. Other Requirements.**

In addition to these specific items, compliance officers will also be asking the following questions in assessing the adequacy of the program:

Does a list of the hazardous chemicals exist in each work area or at a central location?

Are methods the employer will use to inform employees of the hazards of nonroutine tasks outlined?

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Are employees informed of the hazards associated with chemicals contained in unlabeled pipes in their work areas?

On multi-employer worksites, has the employer provided other employers with information about labeling systems and precautionary measures where the other employers have employees exposed to the initial employer's chemicals?

Is the written program made available to employees and their designated representatives?

If your program adequately addresses the means of communicating information to employees in your workplace, and provides answers to the basic questions outlined above, it will be found to be in compliance with the rule.

**5. Checklist for Compliance.**

The following checklist will help to ensure you are in compliance with the rule:

- Obtained a copy of the rule.
- Read and understood the requirements.
- Assigned responsibility for tasks.
- Prepared an inventory of chemicals.
- Ensured containers are labeled.
- Obtained MSDS for each chemical.
- Prepared written program.
- Made MSDSs available to workers.
- Conducted training of workers.
- Established procedures to maintain current program.
- Established procedures to evaluate effectiveness.

**6. Further Assistance.**

If you have a question regarding compliance with the HCS, you should contact your local labor and industries field office for assistance. All field offices have industrial hygienists who can answer your questions. Free consultation services are also available to assist employers, and information regarding these services can be obtained through the field offices as well.

The telephone number for the labor and industries office closest to you should be listed in your local telephone directory. If you are not able to obtain this information, you may contact labor and industries, office of information and assistance, 1-800-4BE-SAFE for further assistance in identifying the appropriate contacts.

[Statutory Authority: Chapter 49.17 RCW. 94-16-145 (Order 94-08), 296-62-05421, filed 8/3/94, effective 9/12/94.]